

Remarks

This amendment responds to the official action mailed January 28, 2008, wherein rejections were made under 35 U.S.C. §112, second paragraph for certain phrases found to lack antecedent basis, and the claims were rejected as anticipated by US 5,469,188 – Krishnamurthy et al., or obvious from a combination of Krishnamurthy and one or more secondary references. In addition, the Examiner responded to applicant's previous response, stating grounds why certain arguments were considered moot in view of new grounds of rejection, or were not considered persuasive for reasons stated.

By this amendment, applicant has corrected the aspects considered indefinite. Applicant has amended the claims to particularly and distinctly define aspects by which the invention claimed as a whole is novel over Krishnamurthy and is unobvious and patentable over a combination of Krishnamurthy and any or all of the references cited in combination with Krishnamurthy. Reconsideration and allowance are requested.

The phrases considered to render certain claims indefinite for lack of antecedent basis were "the character of the input signal" in claim 1, now deleted as shown at lines 32-33; "the nature of the information displayed" in claim 1, now deleted at lines 31-32; and "said changeable selection" in claim 11, now deleted at lines 3-4.

Applicant has revised claim 1 to more clearly recite in claim 1 that applicant's input signal is a video signal that changes in time during operation of the claimed apparatus for analyzing video signals. Application to time changing video is supported throughout the specification. See, for example, paragraph [0057]. As the input signal changes in time, the mode of the display is caused to change by operation of the video processor, which composes the display and changes modes from time to time as the signal meets certain criteria. The selection criteria causing a corresponding change in display modes, and the ability to determine what modes shall be produced when given signal conditions arise, according to user input, is supported in the specification, for example at paragraphs [0018], [0020], [0028], [0034], [0058], [0063], [0077], etc. These aspects are particularly and distinctly claimed. No new matter is presented. The claimed invention is novel and patentable over the prior art.

In the section of the official action regarding response to applicant's arguments, in particular about the claimed invention shifting between different display modes, the Examiner points out with respect to claims 1 and 7-14 that Krishnamurthy has a selection of pre-analysis functions mentioned at col. 3, lines 7-15. The particular passage in Krishnamurthy reads:

To perform pre-analysis of video signals for a digital image an artist first accesses an image file in the computer system 10 and loads it into the frame buffer store of the DSP 20. The artist then selects one of several pre-analysis functions to analyze the image in the frame buffer store to determine whether, when encoded into a broadcast video format, there are possible color distortions according to the selected function. The selection of the pre-analysis function produces a panel display 30 on the computer system display 14, such as the one shown in FIG. 2.

As can be seen from the cited passage, Krishnamurthy's artist (and only the artist) selects a static image file. Also, Krishnamurthy's artist, and only the artist, selects a pre-analysis function among the alternatives. The artist's selection remains the selection thereafter. There is no disclosure or suggestion leading to automatic changes between different display modes upon occurrence of input signal conditions, arranged before such input signal conditions arise, and switching to a mode that was associated by the user with such input signal conditions. There is no automatic switching in Krishnamurthy between modes (cf., "pre-analysis functions") as a time changing video signal meets or fails to meet selection criteria entered by a user. There is no disclosure or suggestion of a video analysis apparatus that automatically assumes one mode of display versus another as the active video meets or does not meet selection criteria.

There is no capacity for Krishnamurthy's user to plan which modes of display shall be assumed automatically when signal conditions arise (as triggered by user-selection criteria being met). There is no ability of either Krishnamurthy's apparatus or Krishnamurthy's artist to cause the apparatus to assume different modes in response to meeting selection criteria. There is no ability of Krishnamurthy's device to switch automatically between different display modes, wherein "modes" as now defined, are

one or more of a full representation of the video picture (occupying all or only part of a display area), a zoom on an area of particular scrutiny in the picture such as where the criteria are met, a graphic or tabular report about the video data in a selected, and subsets thereof. These aspects are not found in Krishnamurthy alone or in combination with Lau. They are supported by applicant's disclosure. They are particularly and distinctly claimed. They cannot be deemed the predictably successful result of routine alterations or combinations of features that might be selected from Krishnamurthy and Lau. There is no basis to consider the invention claimed as a whole to be known or obvious from Krishnamurthy.

There are three points discussed in the Examiner's response to applicant's arguments that are believed noteworthy and resolved according to the present amendment. One point is that applicant's invention is employed with active video. Krishnamurthy's device uses static frames. Therefore, there is no possibility of Krishnamurthy being relevant to the concept of changing display modes as a result of changing input signal conditions. The input signal is static.

Another point is the scope of the claimed limitation of different "modes" of display. The claims as amended provide that modes are the selective display of a subset of display elements. Claim 1 recites what the display elements are. The aspect regarded by the Examiner as a different mode in Krishnamurthy is the setting or resetting of an alarm indicator (presumably coloring or lighting a boxed area on the display). This is not a selectable display mode that is assumed with changes in changing video data. If the alarm indicator represents a mode, then that mode is always included in that display screen. Lighting or not lighting the box represents the displayed condition or data. Lighting or not lighting is not a different display mode.

Applicant's claimed device changes between modes, i.e., changes the display to a different mode or subset of display elements, when signal conditions arise in the changing video. Applicant's switching between modes is automatic. However, the user has determined the switching criteria and has associated with that criteria the selected new display mode to be used when the criteria are met. These aspects are not found in

Krishnamurthy and are not shown to have been obvious from Krishnamurthy in combination with the other cited prior art.

These points of distinction of applicant's invention are aspects that enable applicant's display to assume a display mode when user-selected conditions arise during actively changing video, switching to a display mode that the user has chosen for the display to assume, specifically when certain conditions arise. An object is to enable the user to select a display mode, such as a set of graphs, data and picture segments, that the user considers useful for presenting and diagnosing such conditions. When such conditions are not present, the display can assume a different display mode as a default, or other conditions may arise in the signal and trigger another display mode.

Switching between user-selected display modes on the fly during play of a video signal, based on user-selected criteria being met, is particularly claimed. These attributes were new in field of video production and test equipment when applicant developed and first marketed them. They are not shown by the prior art to have been known or obvious.

Altering Krishnamurthy to operate on video would not be obvious because Krishnamurthy's artist would have little or no time to make and carry out artistic decisions (perhaps $1/30^{\text{th}}$ of a second per frame). Even assuming that video frames were processed sequentially (perhaps in slow motion), there is no logical basis to believe from Krishnamurthy that changing between display modes as each frame arises would be beneficial.

Momentarily lighting an alarm box or displaying a graph that reaches over a threshold line in Krishnamurthy cannot be considered a change to a different display mode as particularly claimed because the same elements remain present in the display (including the graph and the lit or unlit alarm box). Krishnamurthy and the additional prior art references now cited, fail individually to meet the invention claimed as a whole, and fail to demonstrate that the person of ordinary skill could expect probable success if variations to the prior art, or combinations of various aspect, were to be attempted for some reason. Therefore, reconsideration and allowance are requested.

Claims 1, 3-8 and 12 were rejected as anticipated by Krishnamurthy (5,469,188). However Krishnamurthy does not disclose an apparatus wherein the user selects via a control input a selection criteria and a corresponding one of plural selectable modes of display to be initiated when such criteria are met during the ongoing display of a video program. These aspects are particularly claimed. The §102 rejection of claims 1, 3-8 and 12 over Krishnamurthy is unwarranted in view of these aspects recited in amended claim 1.

Claims 9 and 11 were rejected over a combination of Krishnamurthy and Lau (6,525,746). As noted by the Examiner, Lau has various options by which the user can open, close, resize and zoom windows, and one might be motivated to employ these capabilities of Lau in a system as in Krishnamurthy, "because this would give the user increased flexibility in viewing the desired information" on a display. The Examiner's logic is based on the prospect that the user should be free to choose to open, close, resize and zoom of the windows for arbitrary reasons. This is a nice thought, but it is not the subject matter defined in applicant's claim 1 as amended, incorporated by dependent claims 9 and 11. According to the claims, the system switches automatically when a user-entered selection criterion is met, to display a user-selected format of one or more of a set of available display elements as defined in claim 1. Assuming that the person of ordinary skill would perceive a benefit in freely enabling user choices of windows and sizes to display, there is no suggestion of the invention as defined in applicant's claims to employ automatic switching when the video signal meets a given criterion. In fact, automatic switching is inconsistent with user free choice. The user's interest in exerting control over the size and position and zoom state of windows would lead away from the prospect of seizing control automatically and displaying a predetermined different mode when the video signal is detected to meet a selection criterion. The combination of Krishnamurthy and Lau do not encompass the aspect of setting up one or more such choices for modes that will be switched on as a result of the video signal meeting a selection criterion, as opposed to switching only by arbitrary user choice.

Claims 13 and 14 were rejected over Krishnamurthy in combination with McVeigh (US 2002/0141615) and McCalla (US 2004/0031061). According to the discussion in the official action, Krishnamurthy's operation of an alarm when a number of pixel errors exceeds a user-determined threshold number could be combined with McVeigh's tracking of a color object through successive frames and further combined with McCalla's aspect of returning to a default or previous process when no user input is obtained for a period of time. What is missing in this prior art is the bringing together of a user's selection of a switching criteria, the user's selection of a display mode to invoke when the criteria are met, which are both manual choices, and also employing such choices in conjunction with automatic operation of the apparatus.

Automatic detection in the input signal of the criteria selected by the user, and automatic switching to a corresponding display mode selected by the user, provide a versatile and powerful diagnostic display apparatus wherein the sum is more than a simple combination of user selected displays and automatic operation of alarms. By switching automatically to a display mode that the user has selected, specifically when the input signal meets a user-selected criteria, Applicant's invention enables the test apparatus to be reformatted to display variables that concern the input signal situation. The existence of an automatic alarm in Krishnamurthy, the detection of colors in McVeigh and the automatic resumption of a default state in the absence of user input, do not lead routinely to the invention claimed as a whole.

There is no logical basis to predict that success would result from causing Krishnamurthy's display change its display elements (i.e., to be reformatted to a different mode as modes are defined in the amended claims). The object of having and alarm indicator as in Krishnamurthy is to provide a display element that is the same before and after switching (before and after the pixel error threshold is passed) except for the aspect that distinguishes an alarm condition from a non-alarm condition. An alarm is announced by changing the appearance of an existing indicator, for example to light up an alarm indicator block. It is illogical to suggest that one would consider reformatting Krishnamurthy's display when the threshold is passed to a mode with

different elements. This would detract from the viewer's ability to compare the alarm and non-alarm appearances of the alarm indicator block.

Likewise, it is not logical to assume that any probability of a successful result could be perceived from causing McVeigh's display suddenly to switch to displaying something other than the color that is being tracked. It is not logical to assume that McCalla's idea of reverting to a default condition after a period of quiescence would be seen to have a probability of successful application to a diagnostic apparatus that switches display modes when a user-entered criterion is met by an input signal.

Reconsideration is requested. Krishnamurthy fails to meet the invention defined in claim 1 as a whole. The modifications needed to reach the claimed invention from a combination of Krishnamurthy, McVeigh and McCalla are not logical modifications of one another that might be perceived as likely to produce a change for the better. It is only by hindsight that aspects of the prior art can be taken out of their context, which except for Krishnamurthy is not a context of video test equipment and even in the case of Krishnamurthy has no application to switching between display modes as claimed, when user selected conditions arise in the input signal.

The differences between the invention and the prior art are such that the subject matter now claimed as a whole is not shown to have been known or obvious. Reconsideration and allowance of the claims are requested.

Respectfully submitted,

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